

REMARKS

This responds to the Office Action mailed on December 18, 2003. Claims 1, 13 and 23 are amended and claims 31-34 are added; as a result, claims 1-34 are now pending in this application. Applicant does not admit that the cited references are prior art and reserves the right to "swear behind" each of the cited references as provided under 37 C.F.R. 1.131.

§103 Rejection of the Claims

Claims 1-5 were rejected under 35 USC § 103(a) as being unpatentable over Connors et al. ("Compiler Directed Dynamic Computation Reuse: Rationale and Initial Results," ACM, November 1999) and further in view of Chaddha (U.S. 6,215,910).

In the prior response to the Office Action mailed on May 22, 2003, Applicant respectfully submitted that the Office Action did not make out a *prima facie* case of obviousness because one of the cited references (Chaddha) is nonanalogous art. In the "Response to Arguments" section of the current Office Action, the Office Action indicated that Chaddha is analogous art. Applicant respectfully traverses this rejection and has amended claim 1 to clarify that the architectural state vectors are "representative of instances of processor instructions."

In the "Response to Arguments" section, the Office Action indicated that Chaddha is analogous art for three different reasons. Applicant respectfully traverses such reasons and will address each of these reasons.

A first reason that the Office Action indicated that Chaddha is analogous art is based on column 4, lines 33-35 and column 6, lines 43-44 of Chaddha. The citation at column 4, lines 33-35 relates to a procedure for mapping a codebook to an embedded code for data compression. The citation at column 6, lines 43-44 relate to mapping an image vector into "embedded indices". This mapping relates to the encoding of images. See Chaddha at column 6, lines 1-5. Accordingly, Applicant respectfully submits that neither citation in Chaddha relates to computation reuse of software code (the claimed invention).

A second reason that the Office Action indicated that Chaddha is analogous art is because

[t]he present inventions discloses (sic) quantization process of mapping multi-dimensional architectural state to one-dimensional symbol (specification at page 4, lines 1-5), Chaddha discloses that

discloses quantization process of mapping multi-dimensional architectural state to one-dimensional symbol (column 4, lines 33-35 and column 6, lines 43-44). See Office Action at ¶10(1)(1)(ii).

The architectural states, as set forth in the specification, “represent the history of computation within the program . . .” Specification at page 4, lines 5-6. The architectural states are not related to image compression. Chaddha discloses an image compression system. The term “architectural” is not used or described in Chaddha. Therefore, Applicant fails to see how Chaddha discloses a mapping between an architectural state to a one-dimensional system if the term “architectural state is not used or described therein.

A third reason that the Office Action indicated that Chaddha is analogous art is because

“[t]he present inventions uses (sic) lossless compression algorithm (specification, page 5, lines 17-18), Chaddha uses lossless compression algorithm for mapping (Chaddha, col. 6, lines 43-52) . . .” See Office Action at ¶10(1)(1)(iii).

In the claimed invention, the lossless compression algorithms are used for “computation reuse”, not for image compression. See Specification at page 5, lines 17-18. In contrast, Chaddha relates to compression of images “with minimal loss of perceptually relevant information.” See Chaddha at column 6, lines 51-52.

Additionally, in the “Response to Arguments” section, the Office Action makes a conclusory statement without support: “[t]he claimed invention is dealing with the problems associated with increasing execution of application code.” See Office Action at 10(1)(2). Applicant respectfully requests a citation within Chaddha disclosing such problems.

In addition to Chaddha not being analogous art, Applicant respectfully submits that the Office Action has not established a *prima facie* case of obviousness because even when combined, the references do not teach or suggest all of the claim limitations. In particular, the Office Action indicated that “Connors does not specifically disclose mapping multi dimensional architectural state into a plurality of one dimensional symbols and arraigning into phrase of text. See Office Action mailed 5/22/03 at ¶2. As set forth above, Chaddha does not disclose or suggest any type of architectural state and, in particular, a mapping between an architectural state

vectors to one-dimensional symbols. Therefore, because Chaddha is nonanalogous art and because not all of the claim limitations are taught, Applicant respectfully submits that a *prima facie* case of obviousness has not been established. Accordingly, Applicant requests withdrawal of the rejections and reconsideration and allowance of claims 1-5.

Claims 6, 7 and 9 were also rejected under 35 USC § 103(a) as being unpatentable over Connors et al., Chaddha and further in view of Chung et al. (U.S. 5,481,472). Applicant respectfully traverses these rejections. In addition to the remarks set forth above regarding claim 1 from which claims 6, 7 and 9 depend, Applicant respectfully submits the following remarks.

In the prior response to the Office Action mailed on May 22, 2003, Applicant respectfully submitted that the Office Action did not make out a *prima facie* case of obviousness because one of the cited references (Chung) is nonanalogous art. In the “Response to Arguments” section, the Office Action indicated that Chung is analogous art for the following reason: Chung references (sic) discloses data compaction, compression and computation reuse” (citing Chung at the Abstract, lines 1-6 and 10-12 and column 12, lines 63-64). See Office Action at 10(3)(1). Applicant respectfully traverses this rejection.

The only citation in Chung (by the Office Action) involving computation reuse relates to the computing of two values multiple times (“displacements” and “maximum delta”). The repeated computation of these two values are in relation to “data compaction” for control of an automated tool for “the development of integrated circuits” See, for example, Chung at column 5, lines 49-55. The claimed invention relates to computation reuse of software code.

Control of an automated tool (Chung) is not the same field of technology as computation reuse of software code (the claimed invention). Moreover, Chung does not deal with the same problem as the claimed invention. Chung is dealing with the problem of controlling an exposure tool for development of integrated circuits. See Chung at column 2, line 61 - column 3, line 9. In contrast, the claimed invention is dealing with the problems associated with increasing execution of application code. Accordingly, because Chung is nonanalogous art, the Office Action cannot rely on Chung as a reference for a basis for rejection of claims 6, 7 and 9. Therefore, the Office Action has not made out a *prima facie* case of obviousness. Accordingly, Applicant requests withdrawal of the rejections and reconsideration and allowance of claims 6, 7 and 9.

Claims 8, 10-12, 22, 28 and 30 were also rejected under 35 USC § 103(a) as being unpatentable over Connors et al., Chung et al., Chaddha and further in view of Ozluturk et al. (U.S. 6,516,022). In light of the remarks set forth regarding that both Chaddha and Chung are nonanalogous art and because claims 8, 10-12, 22, 28 and 30 depend from and further define claims 1, 13 and 23, respectively, Applicant respectfully submits that the rejection of claims 8, 10-12, 22, 28 and 30 have been overcome and that these claims are in condition for allowance.

Claims 13, 14 and 19-21 were also rejected under 35 USC § 103(a) as being unpatentable over Connors et al., and further in view of Chung et al. In light of the remarks set forth above regarding Chung being nonanalogous art, Applicant respectfully submits that the Office Action did not make out a *prima facie* case of obviousness. Applicant respectfully submits that the rejection of claims 13, 14 and 19-21 have been overcome and that these claims are in condition for allowance.

Claims 15 and 16 were also rejected under 35 USC § 103(a) as being unpatentable over Connors et al. in view of Chung et al. and Chaddha. In light of the remarks set forth regarding Chaddha and Chung being nonanalogous art and because claims 15-16 depend from and further define claim 13, Applicant respectfully submits that the rejection of claims 15-16 have been overcome and that these claims are in condition for allowance.

Claims 17, 18 and 29 were also rejected under 35 USC § 103(a) as being unpatentable over Connors et al. in view of Chung et al. and Lopresti et al. (U.S. 5,832,474). In light of the remarks set forth regarding Chung being nonanalogous art and because claims 17-18 and 29 depend from and further define claims 13 and 23, respectively, Applicant respectfully submits that the rejection of claims 17-18 and 29 have been overcome and that these claims are in condition for allowance.

Claims 23-27 were also rejected under 35 USC § 103(a) as being unpatentable over Connors et al. in view of Chung et al. and Chaddha. Applicant respectfully traverses this rejection and has amended claim 23 to clarify that the architectural states are of “a processor based on execution of an executable program.” In light of the remarks set forth regarding that both Chaddha and Chung are nonanalogous art, Applicant respectfully submits that the rejection of claims 23-27 have been overcome and that these claims are in condition for allowance.

New Claims

Applicant has added new claims 31-34 and submits that no new matter has been added. Applicant respectfully submits for at least the reasons set forth above, claims 31-34 are in condition for allowance.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 371-2103 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

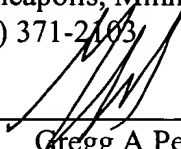
Respectfully submitted,

HONG WANG ET AL.

By their Representatives,

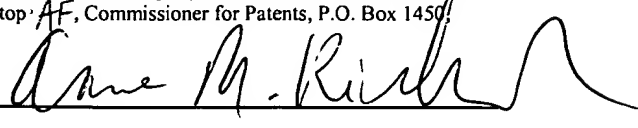
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 18th day of February 2004.

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